

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 15, 2005

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Jerriann Ernstsens, Ph.D., Environmental Specialist, Biologist

RE: Vegetation Standards Clarification and Updates, UtahAmerican Energy, Inc., Horse Canyon Mine, C/007/0013, Task ID #2234

SUMMARY:

The Division received an amendment, on August 24, 2004, that addresses revegetation standards at the Horse Canyon Mine. The Division sent the response on October 26, 2004. The Division required a visit with DWR to evaluate whether the requested plants per acre success standard (2000/acre) is adequate for the postmine land use – wildlife. The field visit was postponed until spring 2005 because of weather limitations. This memo reviews the response to the review of the second amendment (2234) following the spring field visit.

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The amendment meets R645-301-121.100 and R645-301-121.200 for the Biology chapter - vegetation success standard section because the Permittee presents current, clear, and concise information.

Findings:

Information provided in the plan meets the minimum Permit Application Format and Contents in General Contents requirements of the regulations.

RECLAMATION PLAN

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Revegetation: Standards For Success

The MRP meets R645-301-353 because the MRP includes a reclamation plan that discusses how the reclamation measures will meet the performance standards.

The R645 rules do not require productivity measurements for years nine and ten if the postmine land use is wildlife (refer to R645-301-356.230). The postmine land use for Horse Canyon Mine is wildlife. The Division informed the Permittee of this rule, but the Permittee presumably decided to go beyond the requirements and conduct productivity evaluations. The

plan states that the Permittee will conduct the approved productivity method of wet and dry sampling (Sec. 8.4.2.6, pgs. VIII 44). Ocular estimate is not the approved method at bond release.

The Division will judge success based on the effectiveness and permanence of the vegetation for the approved postmine land use. The Permittee will meet success standards when plant cover (Sec. 8.4.2.6, p. VIII 42) and woody plant densities (Sec. 8.4.2.6, p. VIII 44) are not less than 90% of the standard at the 90% confidence level.

The Division authorized a change in woody plant density from 3,000 to 2,000 stems/acre (Sec. 8.4.2.6 p. VIII 45). DWR and the Division visited the reference area and reclamation sites in April 2005 (see King 2003, refer to numbers 3, 6, 7, 15, 17, 16, 11, 13, 14) and determined that the sites were adequately vegetated to meet the post mine land use of wildlife. The only concern was the amount of cheatgrass on sites 11, 13, and 14.

The Permittee commits to bring "diversity" within 90% of the standard.

The Permittee will measure diversity using the Jaccard's equation. In order to successfully meet similarity requirement of 70%, the Permittee must use life-forms as the equation parameter not species. If the seed mix had been developed with the same or nearly the same species as those found in the reference area, then the Permittee could use species as the equation parameter.

The MRP infers that one of the success standards includes bringing life forms up to at least one tree or shrub, one forb, and two cool season grasses. Calculations from using the data from the King report (2003), show that the Permittee meets this standard as of June 2005.

Findings:

Information provided in the plan meets the minimum Revegetation - Reclamation Plan requirements of the regulations.

RECOMMENDATIONS:

Approve the amendment.